

REMARKS

The specification has been amended to provide a cross-reference to the previously filed International Application.

The claims have been amended to delete multiple dependencies and to place the application into better form for examination. Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

Attached hereto is a marked-up copy of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

The claims have been amended as follows:

3. (Amended) A method according to claim 1[or 2], wherein the step of determining a transformed first input signal is performed by using a linear transform of full rank.

4. (Amended) A method according to [any of claims 1-3]claim 1, wherein the step of determining a transformed first input signal is performed by using a convolution transform.

8. (Amended) A method according to claim 5[or 7], wherein the step of determining a transformed first input signal is performed by using a local sine or local cosine transform.

9. (Amended) A method according to [any of claims 1-8]claim 1, wherein the step of determining a transformed first input signal is performed by using a unitary transform.

10. (Amended) A method according to [any of claims 1-9]claim 1, wherein the step of determining a transformed first input signal is performed by using a wavelet transform.

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11. (Amended) A method according to [any of claims 1-6]claim 1, wherein the step of determining a transformed first input signal is performed by using a Hadamard transform.

12. (Amended) A method according to [any of claims 1-6]claim 1, wherein the step of determining a transformed first input signal is performed by using a Rudin-Shapiro transform.

14. (Amended) A method according to [any of claims 1-13]claim 1, which prior to emitting the first output signal, further comprises the step of transforming the predetermined original signal by means of a linear transform being the inverse transform of the predetermined linear transform, thereby obtaining the first output signal.

15. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the step of determining the original first signal from an obtained measure of noise applied to the first input signal.

18. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the step of choosing a suitable transform for transforming the first input signal, said step being performed prior to the step of determining a transformed first input signal, the choice being made based on a

previously obtained measure of noise applied to the first input signal.

19. (Amended) A method according to [any of the preceding claims]claim 1, wherein the step of emitting a first output signal is performed by emitting an electromagnetic output signal.

20. (Amended) A method according to [any of claims 1-8]claim 1, wherein the step of emitting a first output signal is performed by emitting an acoustic output signal.

21. (Amended) A method according to [any of the preceding claims]claim 1, wherein the step of receiving a first input signal is performed by receiving an electromagnetic input signal.

22. (Amended) A method according to [any of claims 1-10]claim 1, wherein the step of receiving a first input signal is performed by receiving an acoustic input signal.

23. (Amended) A method according to [any of the preceding claims]claim 1, wherein at least the transforming of the first input signal and the comparison of the transformed first input signal and a predetermined original first signal is performed by means of digital processing means.

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24. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the step of reflecting the first output signal using an object, the step being performed prior to the step of receiving a first input signal.

25. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the step of transmitting the first output signal using an object, the step being performed prior to the step of receiving a first input signal.

26. (Amended) A method according to claim 24[or 25], further comprising the step of obtaining information about the object.

28. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the steps of

emitting a second output signal by means of a second emitter, the second signal being deterministic and containing an interval of frequencies,

receiving the first input signal by means of the first receiver,

determining the transformed first input signal by transforming said first input signal by means of a predetermined linear transform,

determining a second channel gain by means of comparison of said transformed first input signal and a predetermined original

second signal being equal to said second output signal being emitted and received noiselessly and with a known channel gain, wherein the predetermined original first signal and the predetermined original second signal are linearly independent.

29. (Amended) A method according to [any of claims 1-27]claim 1, further comprising the step of

receiving a second input signal by means of a second receiver,

determining a transformed second input signal by transforming said second input signal by means of a predetermined linear transform,

determining a second channel gain by means of comparison of said transformed second input signal and the predetermined original first signal being equal to said first output signal being emitted and received noiselessly and with a known channel gain.

30. (Amended) A method according to [any of claims 1-27]claim 1, further comprising the steps of

emitting a second output signal by means of a second emitter, the second signal being deterministic and containing an interval of frequencies,

receiving a second input signal by means of a second receiver,

determining a transformed second input signal by transforming said second input signal by means of a predetermined linear transform,

determining a second channel gain by means of comparison of said transformed second input signal and the predetermined original first signal,

determining a third channel gain by means of comparison of the transformed first input signal and a predetermined original second signal being equal to said second output signal being emitted and received noiselessly and with a known channel gain,

determining a fourth channel gain by means of comparison of the transformed second input signal and the predetermined original first signal and the predetermined original second signal are linearly independent.

32. (Amended) A method according to [any of the preceding claims]claim 1, further comprising the steps of

emitting a plurality of output signals by means of a plurality of emitters, each of the plurality of signals being deterministic and containing an interval of frequencies,

receiving a plurality of input signals by means of a plurality of receivers,

determining a plurality of transformed input signals by transforming each of the input signals of said plurality of input signals by means of a predetermined linear transform,

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determining a plurality of channel gains by means of comparison of said plurality of transformed input signals with each of a plurality of predetermined original signals each being equal to one of said plurality of output signals being omitted and received noiselessly and with a known channel gain,

wherein the predetermined original signals are linearly independent.

33. (Amended) A method according to [any of claims 28 or 30-32]claim 28, wherein the predetermined original signals are orthogonal.

34. (Amended) A method according to claim 32[or 33], wherein the step of emitting a plurality of output signals is performed by emitting signals being significant for each of the plurality of emitters.

40. (Amended) A method according to claim 38[or 39], wherein the step of converting the relative distances into a three dimensional position is performed by means of geometrical observations.

41. (Amended) A method according to [any of claims 35-40]claim 35, further comprising the step of determining the motion of the object.

42. (Amended) A method according to [any of claims 35-41]claim 35, further comprising the step of determining the spatial orientation of the object.

43. (Amended) A method according to [any of claims 1-27]claim 1, further comprising the steps of

detecting the presence of an object in the vicinity of at least one of the one or more emitter(s) and/or in the vicinity at least one of the one or more receiver(s) by means of comparing the determined channel gain with a predetermined threshold value, performing a predetermined action in case the determined channel gain exceeds said predetermined threshold value.

45. (Amended) A method according to [any of claims 1-27]claim 1, wherein the step of emitting a first output signal is performed by using a moveable emitter, and wherein the step of receiving a first input signal is performed using at least two substantially stationary receivers, the method further comprising the steps of

determining the distance between the emitter and each of the receivers from the determining channel gains, and

determining the position of the emitter by combining the determined distances.

46. (Amended) A method according to [any of claims 1-27]claim 1, wherein the step of emitting a first output signal is

performed by using a movable emitter, and wherein the step of receiving a first input signal is performed using a least three substantially stationary receivers, the method further comprising the steps of

determining the mutual ratios between the determined channel gains, and

determining the position of the emitter by combining the determined ratios.

47. (Amended) A method according to claim 45[or 46], wherein the emitter and the receivers are comprises in an audio system, the method further comprising the step of adjusting the loud speakers of the audio system according to the position of the first emitter.

48. (Amended) A method according to [any of claims 1-27]claim 1, further comprising the steps of

inserting a time delay before the step of emitting the first output signal,

determining the contribution of the received input signal from other sources than the first output signal,

reducing said contribution of the received output signal.

50. (Amended) A method according to claim 48[or 49], wherein the contribution from other sources than the first output

signal is originating from cross talk between electrical conductors on a printed circuit board.

51. (Amended) A method according to [any of claims 1-27]claim 1, further comprising the step of obtaining information regarding the temperature of one or more parts of an object.

56. (Amended) A pointing device according to [any of claims 53-55]claim 53, wherein the object is at least part of a human being.

(Rev. 11/13/01)